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ABSTRACT

Successful performance improvement efforts draw from such disciplines as psychology and systems theory, and from the fields of instructional design and human resource development. Both knowledge management and organizational learning are valuable additions to the human performance technologist's repertoire for performance analysis and intervention selection. Future endeavors in research should provide empirical evidence of the value of knowledge management and organizational learning to organizational performance. The study of knowledge management and organizational learning is currently moving towards broad-based, empirical research. The knowledge gained from this research will enable human performance technology researchers and practitioners to implement interventions based on tested models, and proven processes and outcomes of knowledge management and organizational learning. This paper discusses how the human performance technologist can augment human performance analysis and solution planning by drawing from knowledge management and organizational learning literature. (Contains 26 references.) (Author/AEF)

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Expanding the Human Performance Technologist's Repertoire: Knowledge Management, Organizational Learning and Human Performance Technology Literature Review

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Successful performance improvement efforts draw from such disciplines as psychology and systems theory, and from the fields of instructional design and human resource development. Both knowledge management and organizational learning are valuable additions to the human performance technologist's repertoire for performance analysis and intervention selection. In this paper, I will discuss how the human performance technologist can augment human performance analysis and solution planning by drawing from knowledge management and organizational learning literature.

The concept of organizations as learning systems emerged at the beginning of the twentieth century. However, it was not until the 1990s that we witnessed an overwhelming interest in the impact of knowledge management and organizational learning on organizational performance.

Current research on knowledge management and organizational learning has dealt primarily with theory and model building. In addition to the empirical research, there is an abundance of literature based on the experiences of practitioners and facilitators working in these fields (Davenport & Prushak, 1998; Preskill & Torres, 1999; Hansen, Nohria, & Tierney, 1999). The existing literature represents the first step in a long-term research program. The second research phase began in the late 1990s. It involves the development and validation of survey instruments to diagnose and establish learning organizations; and empirical studies that test models and describe the processes and outcomes of knowledge management and organizational learning on organizational performance (O'Dell, Grayson, Jr., & Essaides, 1998; Yeung, Ulrich, Nason, & Von Glinow, 1999).

Knowledge management is a conscious strategy of getting the right knowledge to the right people in the right time, and helping people share and put information into action in ways that strive to improve organizational performance (O'Dell, Grayson, Jr., & Essaides, 1998).

The focus of most knowledge management literature is on knowledge generation, codification and transfer. Knowledge generation encompasses knowledge acquired by an organization as well as knowledge developed within it. The aim of codification is to put organizational knowledge into a form that is organized, explicit, portable, easy to understand and accessible to those who need it. An essential element of knowledge management, which is vital to the organization's success, is to develop specific strategies to encourage spontaneous, unstructured knowledge transfer (Davenport & Prusak, 1998). Nonoka and Takeuchi (1995) defined organizational knowledge creation as the capability of a company as a whole to create new knowledge, disseminate it throughout the organization, and embody it in products, services and systems. Similarly, DiBella and Nevis (1998) stated that organizational learning is a cycle of three processes: knowledge creation or acquisition, knowledge dissemination, and knowledge use.

In contrast, O'Dell, Grayson, Jr., and Essaides (1998) proposed a seven-step knowledge process (create, identify, collect, organize, share, adapt and use). Yeung, Ulrich, Nason, and Von Glinow (1999) offered a different perspective about the organization's capacity to learn. They proposed that an organization's fundamental learning capability represents its capacity to generate and generalize ideas with impact (change) across multiple organizational boundaries (learning) through specific management initiatives and practices (capability).

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Attention has also been given to the sharing of tacit knowledge and explicit knowledge at the individual, group and organizational levels. Both tacit and explicit knowledge are the key dynamics of knowledge creation in the business organization (Nonoka & Takeuchi, 1995). Davenport and Prusak (1998) explained that knowledge that is explicit can be embedded in procedures or presented in documents and databases and transferred with reasonable accuracy, whereas tacit knowledge transfer generally requires extensive personal contact between individuals and groups within the organization. The process of knowledge sharing is necessary if the organizational interpretation system is to transcend the various interpretations of problems and solutions at the individual level (Walsh & Ungson, 1997).

Literature on current business practices indicates that consulting businesses employ two different knowledge management strategies - codification and personalization. The codification strategy calls for knowledge to be carefully codified and stored in databases where it can be accessed and used easily by anyone in the company. With the personalization strategy, knowledge is closely tied to the person who developed it and is shared mainly through direct person-to-person contacts. Companies that use knowledge effectively pursue one strategy predominately (80%) and use the second strategy (20%) to support the first (Hansen, Noirha, & Tierney, 1999).

Organizational learning is defined as an adaptive change process that is influenced by past practice, focused on developing or modifying routines, and supported by organizational memory (Nonoka & Takeuchi, 1995). The essence of organizational learning is members' sharing of experiences and learning together (Schwen, Kalman, Hara, & Kisling, 1998).

The organizational learning literature is primarily devoted to the development of new or different organizational structures that support the conditions for learning. Managing intellectual capital requires organizations to create and sustain an environment where employees want to contribute their ideas, innovations, and analysis, and which receives them willingly (Horibe, 1999). Tampoe (1996) states that a facilitative environment interacts with the individuals motivational drive and competence to release motivational energy. This motivated energy is directed into professional and personal achievement by ensuring that individuals have a clear sense of purpose and are sustained by access to information and peer contacts.

Conversely, Weick and Westley (1996) argue that organizing and learning are antithetical processes, which means the phrase *organizational learning* qualifies as an oxymoron. They state that to learn is to disorganize and increase variety, whereas to organize is to forget and reduce variety. Consequently, organization must be reduced in order to create conditions conducive to learning. When organizations are allowed to exist as self-organizing entities, then learning and knowledge come to the surface naturally, because survival depends on it (Cavaleri & Fearon, 1996). Lyles and Schwenk (1997) hold a similar view regarding structures that support organizational learning. In tightly linked or coupled knowledge structures, there is strong consensus among organizational members. There is greater rigidity in the sense they do not have flexibility in responding to environmental changes. However, loosely coupled structures incorporate more disagreement and alternative interpretations. Changes can be made easily since there is more flexibility in action taking and strategies.

Organizations build learning capability through a variety of processes. O'Dell, Grayson, Jr., and Essaides, (1998) promote the use of benchmarking between organizations and within the organization. Benchmarking is a process of systematically finding and adapting best practices in order to improve performance. A broader view of how organizations approach the learning process is supported by the research conducted by Yeung, Ulrich, Nason, and Von Glinow (1999). They argue that there are four different styles of organizational learning: experimentation, competency acquisition, continuous improvement and benchmarking. Competency acquisition and continuous improvement are the most popular learning styles based on survey findings, yet experimentation has the most positive effect on business performance.

In terms of best practices, many successful organizations have abandoned hierarchical structures, organizing themselves in patterns specifically tailored to the particular way their professional intellect creates value (Quinn, Anderson, & Finkelstein, 1996). In inverted organizations, the former line hierarchy

becomes a support structure. Some organizations have created intellectual (spider's) webs in which people are brought together quickly to solve a problem and then disbanded just as quickly when the job is done.

An applied field whose aim is the achievement of valued human performance in the workplace is human performance technology. Human performance technologists adopt a systems view of a performance gap. They systematically analyze both gap and system, and design cost-effective and efficient interventions that are based on analysis of data, scientific knowledge and documented precedents in order to close the gap in the most desirable manner (Stolovitch & Keeps, 1992). Foshay and Moller (1992) describe human performance technology as an applied field of practice that is structured primarily by real-world problems of human performance (in the workplace). It draws from any discipline that has prescriptive power in solving any human performance problem. It also may draw from other applied fields when they contribute technologies of use in solving human performance problems.

Performance analysis is a process for defining the business need and isolating root causes of problems within existing systems or for identifying opportunities and constraints in the introduction of new structures, systems or machines (Brandenberg & Binder, 1992). Primary interventions used by human performance technologists include: training, job aids, feedback systems, employee selection, and organizational technology (Foshay & Moller, 1992). Schwen, Kalman, Hara, & Kisling (1998) add that the human performance technology analysis process involves collecting data and information that can lead to the discovery of new knowledge and make tacit knowledge salient, and the solutions may involve interventions related to two or more root causes, and integrated interventions such as relevant information data bases, coaching and mentoring, and modification of related rewards and incentives.

Some common themes have emerged in the literature with respect to knowledge management, organizational learning and human performance technology. Knowledge management involves three main processes: generation, codification and transfer of knowledge. While explicit and tacit knowledge are necessary for organizational learning to occur; it is recognized that because tacit knowledge is hard to articulate in formal language it is also more difficult to disseminate and transfer. The organizational learning literature indicates organizations that have developed structures and strategies that nurture and support learning have experienced improved performance despite the rapid changes facing organizations. Human performance technology relies on thorough performance analysis to identify all factors contributing to the current level of performance and to propose alternative interventions that will eliminate the cause of the performance discrepancy.

Another trend that is emerging in the literature involves the contribution of knowledge management to the field of human performance technology. Rossett (1999) outlines that knowledge management perspectives can influence analysis. Analysts would provide learners with a knowledge management resource that provides meaningfully organized data elements. To develop this resource, the analysts must capture an array of diverse experiences and examples, and include rich commentary that assures a deeper experience for users when they choose to review both the knowledge element and people's ideas about it. Schwen, Kalman, Hara, & Kisling (1998) state that the knowledge management literature gives linking concepts to human performance analysis (i.e. making tacit knowledge explicit, identifying hidden needs) and solution planning (i.e. capturing expert's knowledge, mental models).

The knowledge management literature states that tacit knowledge is hard to articulate in formal language and it is also more difficult to disseminate and transfer. During the performance analysis process, the human performance technologist must find ways to make this tacit knowledge explicit. In addition to the standard data-gathering tools (observation, interviews, surveys, and extant data analysis), the human performance technologist could employ critical incident analysis to draw out the tacit knowledge. Critical incident analysis is used to elicit *war stories* by asking individuals to describe, in terms of behaviour, what exactly they had done (correctly/incorrectly). During the intervention planning phase, the human performance technologist must take into consideration that explicit knowledge can be embedded in procedures or presented in documents and databases and transferred with reasonable accuracy, whereas tacit knowledge transfer generally requires extensive personal contact between individuals and groups within the organization. Interventions such as classroom training, policy and procedures manuals, data base systems, and job aids are generally limited to the transfer of explicit knowledge. On-the-job training, under

the guidance of a coach or mentor, should be considered for transferring tacit knowledge that is closely tied to the person who developed it ,or which is shared mainly through direct person-to-person contacts.

Both knowledge management and human performance technology literature focus on competencies (knowledge and skills) required for individuals to perform their work and to enable the organization to maintain its competitive advantage. It is becoming increasingly important for organizations to attract and retain competent individuals with exceptional talent. Human performance technologists should examine what organizations have in place, or should have in place, to further develop each individual's knowledge and competencies, and to support each individual's ability to contribute to the organization's objectives.

Individuals search for knowledge because they expect it to help them succeed in their work. Individuals learn within the organization when they acquire knowledge through education, experience or experimentation. Attention should also be given by human performance technologists to identify which learning style (experimentation, competency acquisition, continuous improvement, or benchmarking) organizations employ. Since organizations learn from both direct experience and the experience of others, the human performance technologist will need to look at intervention designs that enable the system and culture of the organization to retain and transfer knowledge from individuals. In this way, organizational learning will be embedded in the organization's routines, technologies, policies and procedures, and in patterns of behaviour that continue to exist despite turnover of individuals.

The literature on organizational learning indicates that managing intellectual capital requires organizations to create and sustain an environment where employees want to contribute their ideas, innovations, and analysis, and which receives them willingly. During the performance analysis phase, the human performance technologist should study the organizational structure and job requirements to determine the extent to which the organization allows for the existence of naturally occurring learning events. In order to plan appropriate solutions, the human performance technologist should investigate how the organization enables individuals to access knowledge that has been codified and stored in documents and databases, and how it fosters personal contact. Personal contact can be achieved through on-the-job training under the guidance of a coach or mentor. Alternatively, organizations could form action learning teams or employ intellectual (spider's) webs in which people are brought together quickly to solve a problem and then disbanded just as quickly when the job is done.

Future endeavors in research should provide empirical evidence of the value of knowledge management and organizational learning to organizational performance. As stated earlier in this report, the study of knowledge management and organizational learning is currently moving towards broad-based, empirical research. The knowledge gained from this research will enable human performance technology researchers and practitioners to implement interventions based on tested models, and proven processes and outcomes of knowledge management and organizational learning.

There is also a need for human performance technology researchers to apply paradigms for research that will be both effective for theory development and appropriate to the settings of human performance technology practice. Human performance technology by its nature excludes use of experimental paradigm on practical, ethical and methodological grounds. However, researchers will find descriptive or investigative (case studies) most useful research paradigms. If researchers and practitioners take the time to reflect systematically on their experience, it will be possible to expand the empirical base of the field (Foshay & Moller, 1992).

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